

# **Index File**

## **Application No. UP-693-06**

### **Dominion Virginia Power**

Application No. UP-693-06 is a request for a major amendment to a legally conforming Special Use through the expansion by more than 25% of an existing electric substation on a 3.08-acre parcel of land located at 441 Waller Mill Road (Route 713).

The staff is recommending approval.

#### Attachments:

1. Staff report
2. Zoning map
3. Vicinity map
4. Aerial photo
5. Concept plan
6. Project narrative submitted by the applicant
7. Proposed Resolution No. PC06-1

# COUNTY OF YORK

## MEMORANDUM

**DATE:** December 20, 2005 (PC Mtg. 1/11/06)

**TO:** York County Planning Commission

**FROM:** Timothy C. Cross, AICP, Principal Planner

**SUBJECT:** Application No. UP-693-06, Dominion Virginia Power

### **ISSUE**

This application is a request, pursuant to Section 24.1-115(d)(3) of the York County Zoning Ordinance, to authorize a major expansion of a conforming electric substation on a 3.08-acre parcel located at 441 Waller Mill Road (Route 713) approximately 1,520 feet north of the intersection of Waller Mill Road and Plantation Drive (Route 789) and further identified as Assessor's Parcel No. 6-18.

### **DESCRIPTION**

- Property Owner: Virginia Electric and Power Company
- Location: 441 Waller Mill Road (Route 713)
- Area: 3.08 acres
- Frontage: Approximately 475' on Waller Mill Road
- Utilities: Public water is available; sanitary sewer is not.
- Topography: Relatively flat
- 2025 Land Use Map Designation: Medium Density Residential
- Zoning Classification: R20 (Medium-density single family residential)
- Existing Development: Electric substation and power transmission lines
- Surrounding Development:
  - North: Single-family detached home
  - East: None
  - South: None
  - West: None
- Proposed Development: Expansion of fenced compound area to include installation of two circuit breakers and associated structures and equipment

## **CONSIDERATIONS/CONCLUSIONS**

1. This application seeks to expand and upgrade the Dominion Virginia Power Waller Substation located at 441 Waller Mill Road through the installation of additional circuit breakers and associated equipment that will require the fenced area of the substation to be enlarged by 67%. The property is zoned R20, and since electric substations require a Special Use Permit in the R20 district, the substation is considered a conforming Special Use. Any expansion greater than 25% is considered a major amendment requiring approval by the Board of Supervisors, including Planning Commission review and public hearings.
2. The purpose of the proposed breaker installation is to split two existing 230,000-volt transmission lines that run from the Yorktown Power Station to substations in New Kent and Charles City Counties and serve much of the Williamsburg area and areas to the north and west. A power failure on either line would result in a loss of several power transformers along the corridor and would affect thousands of customers. Installation of the breakers will split each transmission line into two lines, reducing the number of customers affected by a single line failure. Specific equipment to be installed includes the two circuit breakers and associated equipment to support them, one new concrete and steel backbone structure approximately 45' in height, steel bus supports and aluminum bus (also known as a bus bar, which is a conducting bar that carries heavy current to supply several electric circuits) approximately 27' in height, and a new prefabricated control building (20' by 20') identical to the existing building. The new building is needed because of a lack of space in the existing structure and the need to keep the transmission controls separate from the distribution controls.
3. The subject property is designated for Medium Density Residential development in the Comprehensive Plan and is zoned R20 (Medium-density single family residential). Development in the surrounding area is sparse; to the east of the subject parcel is an approximately 400-acre undeveloped parcel owned by the Colonial Williamsburg Foundation. To the west, across Waller Mill Road, is undeveloped watershed property owned by the City of Williamsburg. A single-family detached home to the north is the only development adjacent to the substation property. The house is approximately 240' from the existing fenced area and will be approximately 170' from the expanded fenced area if this application is approved. The area of the proposed expansion is within Dominion Virginia Power's 200' transmission right-of-way, which follows the northern property boundary and traverses the parcel on which the adjacent home sits.
4. There is currently no landscaping on the parcel. To screen views of the substation from adjacent properties and from Waller Mill Road, the applicant plans to install landscaping around the perimeter of the site. The concept plan submitted by the applicant depicts a total of 147 evergreen shrubs and/or trees surrounding the existing and proposed fenced area. Staff has proposed a condition of approval to ensure that the entire site is properly landscaped if this application is approved.

5. Since the substation is unmanned, the only traffic it generates consists of periodic inspections and maintenance trips. The proposed expansion, therefore, will not result in any increased traffic.
6. The proposed work involves existing transmission lines and will not increase human exposure to electromagnetic fields. Furthermore, it should be noted that in a study dated October 31, 2000, the Virginia Department of Health determined that there is no conclusive and convincing evidence that exposure to electromagnetic fields emanating from nearby high-voltage transmission lines increases the risk of cancer or has any other detrimental health effects on humans.

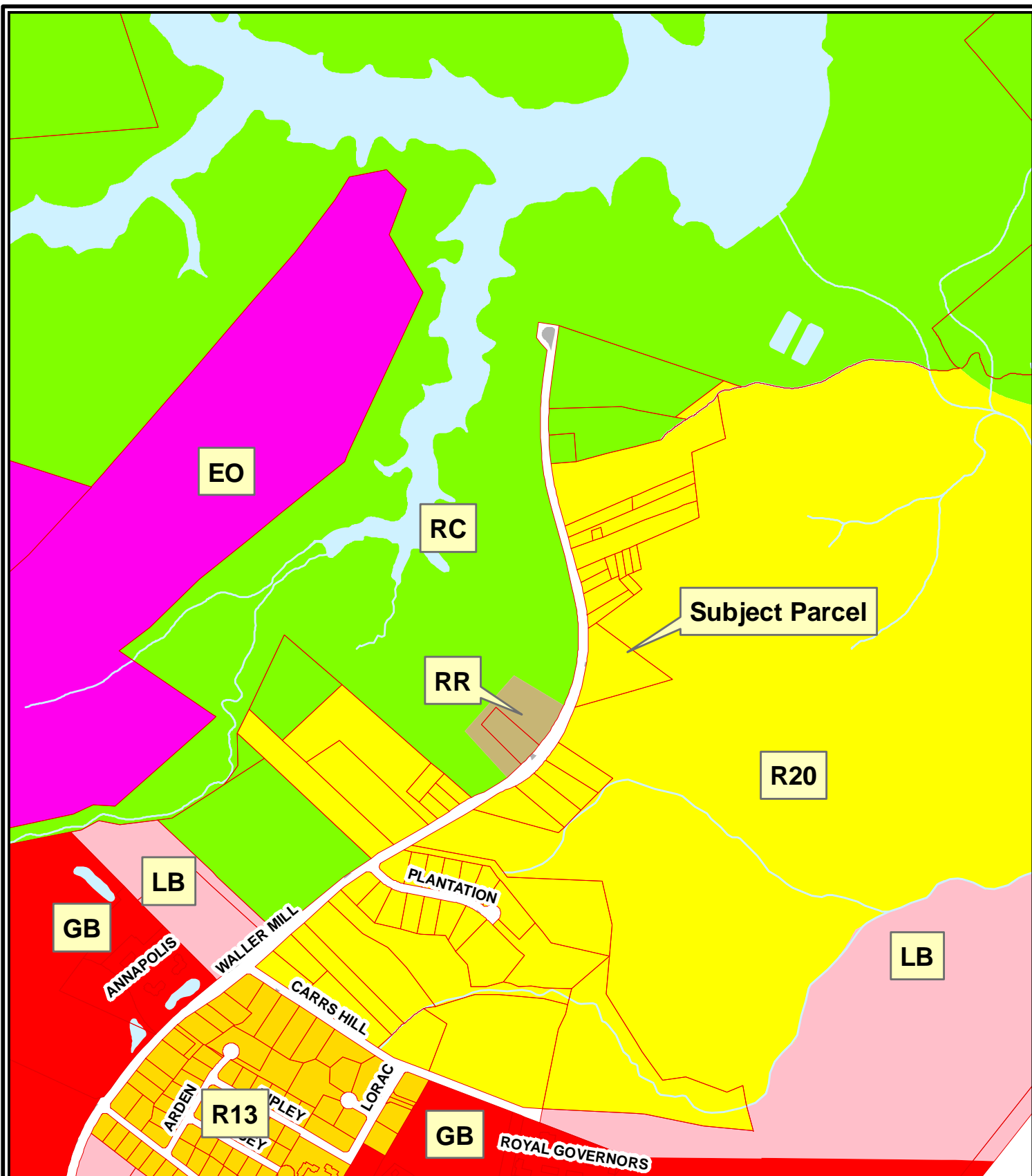
### **RECOMMENDATION**

Staff is of the opinion that the proposed expansion will improve the reliability of electric service for County residents and businesses with no adverse impacts on the surrounding area, which is almost entirely undeveloped. Electric substations by their nature have an industrial appearance that is not particularly attractive; however, the proposed landscaping around the perimeter of the facility will enhance the overall appearance of the site. The landscaping will not, of course, block views of the taller structures that are proposed, but the location of the proposed expansion is within a 200' transmission line right-of-way that already contains several similar structures of equal or greater height, so the visual impact should not be significant. Therefore, based on the considerations and conclusions as noted, staff recommends that the Commission forward this application to the Board of Supervisors with a recommendation of approval.

### **TCC**

#### **Attachments**

- Zoning Map
- Vicinity Map
- Aerial Photo
- Concept Plan
- Project Narrative submitted by the applicant
- Proposed Resolution No. PC06-1

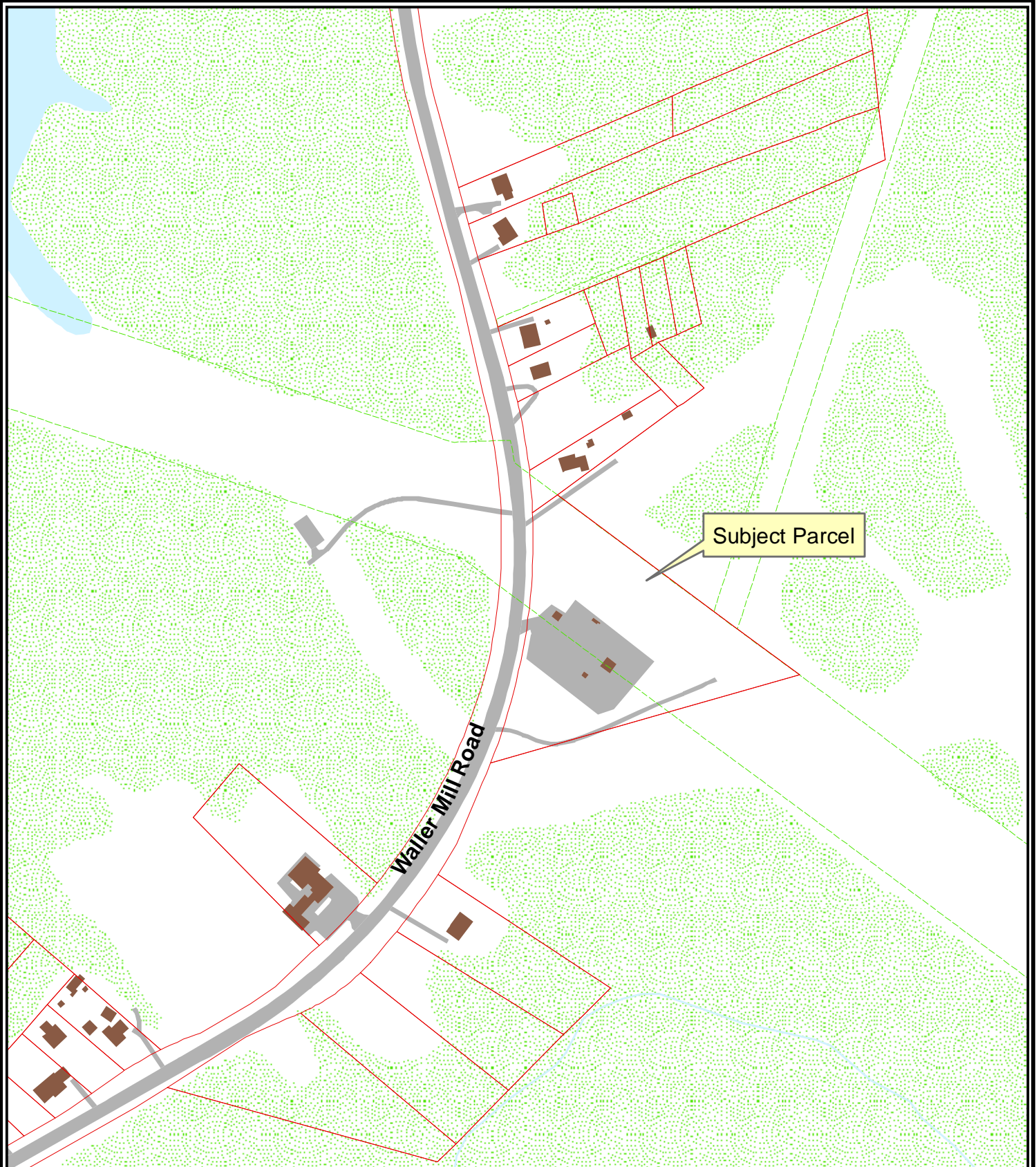


## Zoning Map



THIS IS NOT A LEGAL PLAT.  
This map should be used for  
information purposes. It is not  
suitable for detailed site planning.

*Flood Information Courtesy of:  
Federal Emergency Management Agency (FEMA)  
This flood data has not been certified.*



## 441 Waller Mill Road



**GEOGRAPHIC INFORMATION SYSTEMS**  
Division of Computer Support Services  
Department of Financial & Management Services  
[WWW.YORKCOUNTY.GOV](http://WWW.YORKCOUNTY.GOV)

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HORIZONTAL ACCURACY: +/- 2.5 feet    DATUM: VA State Plane South, NAD 83  
VERTICAL ACCURACY: +/- 1 foot    DATUM: NVAD 1929

This map should NOT be used for engineering or other design purposes without full verification having been undertaken by a qualified surveyor.

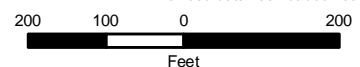
The County of York, Virginia assumes no responsibility for the accuracy of this map or the information contained herein or derived here from. The buyer and/or user assumes all risks and liabilities whatsoever resulting from, or arising out of the use of this map.

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**Subject Parcel**

200'  
VEPCO Right-of-Way

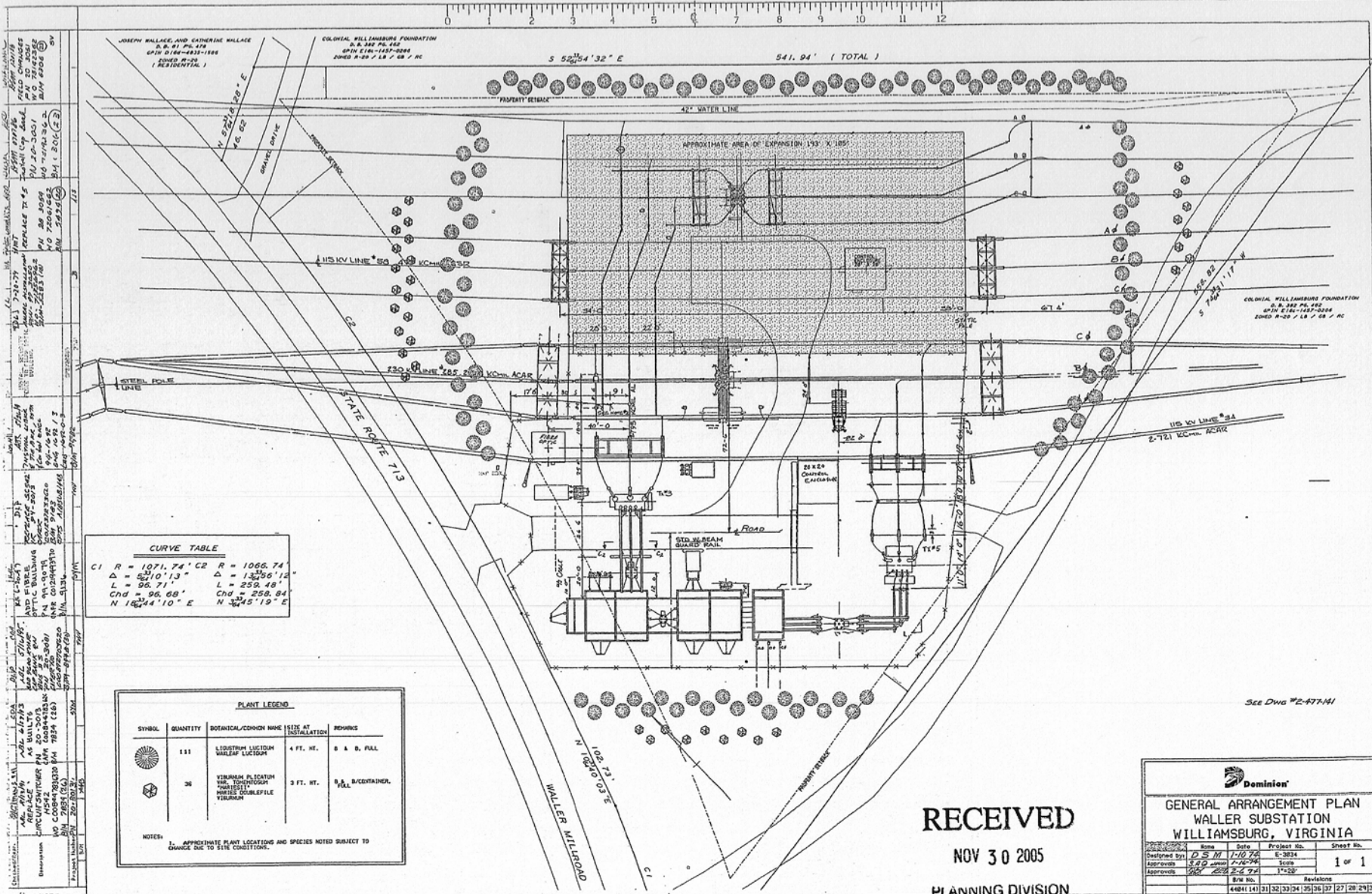
## Aerial Photo



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




CURVE TABLE

C1	R = 1071.74'	C2	R = 1066.74'
$\Delta = 53^{\circ}10'13''$		$\Delta = 13^{\circ}56'12''$	
L = 96.71'		L = 259.48'	
Chd = 96.68'		Chd = 258.84'	
N $18^{\circ}44'10''$ E		N $3^{\circ}45'19''$ E	

PLANT LEGEND				
SYMBOL	QUANTITY	BOTANICAL/COMMON NAME	SIZE AT INSTALLATION	REMARKS
	111	LIGUSTRUM LUCIDUM WILLOW LIGUSTRUM	4 FT. HT.	S & B. FULL
	36	VIBURNUM PLICATUM VIB. SPICATUM HAWKES DOUBLEFILE VIBURNUM	3 FT. HT.	S & B/CONTAINER FULL

 <b>Dominion</b> ENERGY SERVICES		Project No. _____ Sheet No. _____	
<h1>GENERAL ARRANGEMENT PLAN</h1> <h2>WALLER SUBSTATION</h2> <h2>WILLIAMSBURG, VIRGINIA</h2>			
PREPARED BY DESIGNED BY APPROVED BY DATE	D.S.M. 1/16/94 5/10/94 5/24/94	Project No. E-3034 Scale 1"=20'	Sheet No. 1 of 1
CADD FILE NAME: 0477144.dgn PLOTTED: 04/11/94		Revisions 4/8/94 (1) 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 96	



## **Narrative**

### **Waller Substation Expansion**

Dominion Virginia Power is working to upgrade the 230kV transmission system in eastern Virginia. A major improvement to reliability is the planned breaker installation at Waller Substation. The 230kV Lanexa-Yorktown Line No. 209 is 33.28 miles long. The average transmission line length is 13.7 miles. By adding the breaker at Waller Substation, the line is split into a 14.48-mile section and an 18.8-mile section. This will limit customer impact in the event of an outage on the transmission line. The result is improved reliability in the area.

The total Waller Substation property is 2.78 acres. The existing fenced area is approximately 0.7 acre. The proposed expansion is approximately 0.47 acre. Total fenced area is approximately 1.17 acres.

This is an unmanned facility. Routine inspections and maintenance are conducted periodically. There is no generation at this site; it exists for the distribution of electricity to customers. There should not be any offensive conditions associated with this site since there is no power generation. A substation does involve high-voltage equipment. We routinely surround our substations with an 8-foot fence consisting of 7 feet of chain link fabric and 1 foot that is 3 strands of barbed wire turned outward at a 45° angle. The National Electric Safety Code requires 7 feet of fabric. Dominion standards add the additional foot of barbed wire as an added deterrent to access.

The existing substation does lack proper screening. The proposed project includes the installation of a landscape buffer to lessen any visual impact on our neighbors.

Dominion Virginia Power is sensitive to public concern over electromagnetic fields (EMF). This project will have no appreciable EMF effect.

PLANNING COMMISSION  
COUNTY OF YORK  
YORKTOWN, VIRGINIA

Resolution

At a regular meeting of the York County Planning Commission held in the Board Room, York Hall, Yorktown, Virginia, on the \_\_\_\_ day of \_\_\_\_, 2006:

Present

Vote

Alfred E. Ptasznik, Jr., Chair  
Nicholas F. Barba, Vice Chair  
Christopher A. Abel  
Alexander T. Hamilton  
John W. Staton  
Anne C. H. Conner  
John R. Davis

On motion of \_\_\_\_\_, which carried \_\_\_\_, the following resolution was adopted:

A RESOLUTION TO RECOMMEND APPROVAL OF AN APPLICATION TO AUTHORIZE A MAJOR EXPANSION OF A CONFORMING ELECTRIC SUBSTATION LOCATED AT 441 WALLER MILL ROAD

WHEREAS, Dominion Virginia Power owns and operates an electric substation on a 3.08-acre parcel located at 441 Waller Mill Road and further identified as Assessor's Parcel No. 6-18 (GPIN# D-16d-4872-1229); and

WHEREAS, the referenced substation constitutes a conforming Special Use pursuant to Section 24.1-115(c)(4) of the York County Zoning Ordinance; and

WHEREAS, Dominion Virginia Power has submitted Application No. UP-693-06, pursuant to Section 24.1-115(d)(3) of the York County Zoning Ordinance, to request authorization to expand the referenced substation by approximately 67%, which constitutes a major amendment that must be approved in the same manner and under the same procedures as are applicable to issuance of an original Special Use Permit; and

WHEREAS, said application has been referred to the York County Planning Commission in accordance with applicable procedure; and

WHEREAS, the Planning Commission has conducted a duly advertised public hearing on this application; and

WHEREAS, the Commission has carefully considered the public comments with respect to this application;

NOW, THEREFORE, BE IT RESOLVED by the York County Planning Commission this the \_\_ day of \_\_\_\_\_, 2006 that Application No. UP-693-06 be, and it is hereby, transmitted to the York County Board of Supervisors with a recommendation of approval to authorize the expansion of a legally conforming electric substation on a 3.08-acre parcel located at 441 Waller Mill Road and further identified as Assessor's Parcel No. 6-18 (GPIN# D-16d-4872-1229) subject to the following conditions:

1. This approval shall authorize the expansion of an existing conforming electric substation located at 441 Waller Mill Road and further identified as Assessor's Parcel No. 6-18 (GPIN# D-16d-4872-1229).
2. A site plan prepared in accordance with the provisions of Article V of the Zoning Ordinance shall be submitted to and approved by the York County Department of Environmental and Development Services, Division of Development and Compliance prior to the commencement of any construction or land disturbing activity in connection with the expansion. Said site plan shall be in substantial conformance with the concept plan submitted by the applicant and received by the York County Planning Division November 30, 2005, as supplemented by the applicant's project narrative, titled "Narrative, Waller Substation Expansion," and the scope of work titled "Scope of Work, Project No. 94-1954," copies of which shall remain on file in the office of the Planning Division.
3. In accordance with the referenced concept plan, trees and/or shrubs shall be planted around the perimeter of the substation to buffer views from surrounding properties and Waller Mill Road.
4. The expansion shall be in conformance with the performance standards set forth in Section 24.1-493, *Standards for all utilities uses*, of the Zoning Ordinance.
5. In accordance with Section 24.1-115(b)(7) of the York County Zoning Ordinance, a certified copy of the resolution authorizing this Special Use Permit shall be recorded at the expense of the applicant in the name of the property owner as grantor in the office of the Clerk of the Circuit Court prior to application for site plan approval.